

Wang et al. reference clearly does not meet each and every limitation of the independent Claims 1, 8-11, 20-22, 29, 30, and 35-42.

The Wang et al. reference describes a method of simulating thermohydraulic phenomena in a power plant (col. 1, lines 25-32). With regard to a recirculation pump model, as described in col. 33, lines 33-56, the pump performance is characterized by homologous curve data provided from pump manufacturer, and then the pump head and pump torque are obtained from the homologous curve data. The pump speed is calculated from the motor torque, frictional torque and hydraulic torque. Finally, the pump heat is computed from the multiplication of pump speed and hydraulic torque to simulate all the scenario of reactor coolant pump in a complete power plant operation. Specifically, the Wang et al. reference describes simulation only for thermohydraulic phenomena and not for saving energy, which can be achieved by the present invention.

The present invention, as defined in independent Claim 1, recites processing means for computing variations in the operating flow rate, operating pressure, or power consumption while the rotational speed of the fluid machinery to be diagnosed is varied. Similarly, independent Claim 8 recites computing variations in the operating flow rate, operating pressure, or power consumption when the rotational speed of the fluid machinery to be diagnosed is varied. Independent Claim 9 recites processing means for computing variations in the operating point when the rotational speed of the fluid machinery to be diagnosed is varies. Similarly, independent Claim 10 recites computing variations in the operating point when the rotational speed of the fluid machinery to be diagnosed is varied.

As described above, the Official Action indicates that the Wang et al. reference anticipates each of these independent Claims 1 and 8-10. However, the Wang et al. reference fails to disclose or suggest calculation of variations in the operating flow rate, operating pressure, or power consumption *when the rotational speed of the fluid machinery to be*

diagnosed is varied. Accordingly, the Applicants respectfully submit that the Wang et al. reference does not anticipate Claims 1 and 8-10 of the present application.

Independent Claim 11 recites estimating provisional characteristics of the fluid machinery based on the calculated head and shaft power, and identifying characteristics of the fluid machinery and the operating point including the operating flow rate by correcting said provisional characteristics of the fluid machinery based on measurement data. As described above, the Official Action indicates that the Wang et al. reference anticipates independent Claim 11. However, the Wang et al. reference fails to disclose or suggest *estimation of provisional characteristics and correction of the provisional characteristics.* Accordingly, the Applicants respectfully submit that the Wang et al. reference does not anticipate Claim 11 of the present application.

Independent Claim 20 recites calculating means for calculating the reduction in power consumption achieved when reducing the rotational speed of the fluid machinery with a frequency converter. Similarly, independent Claim 21 recites calculating the reduction in power consumption achieved when reducing the rotational speed of the fluid machinery. As described above, the Official Action indicates that the Wang et al. reference anticipates each of independent Claims 20 and 21. However, the Wang et al. reference fails to disclose or suggest *calculation of reduction in power consumption achieved when reducing the rotational speed of the fluid machinery.* Accordingly, the Applicants respectfully submit that the Wang et al. reference does not anticipate Claims 20 and 21 of the present application.

Independent Claims 22 and 29 recite displaying the flow rate-pressure characteristics of the fluid machinery varied according to the rotational speed. Similarly, independent Claim 30 recites a plurality of curves indicating the flow rate-pressure characteristics of fluid machinery in each of rotational speeds and displayed in a coordinate system. As described above, the Official Action indicates that the Wang et al. reference anticipates each of

independent Claims 22, 29, and 30. However, the Wang et al. reference fails to disclose or suggest *displaying the flow rate-pressure characteristics of the fluid machinery varied according to the rotational speed*. Accordingly, the Applicants respectfully submit that the Wang et al. reference does not anticipate Claims 22, 29, and 30 of the present application.

Independent Claims 35-39 and 41 recite calculating a reduction in power consumption achieved when reducing a rotational speed of the fluid machinery, based on the identified characteristics of the fluid machinery. Similarly, independent Claims 40 and 42 recite calculating a reduction in power consumption achieved when reducing a rotational speed of the fluid machinery, based on the refined characteristics of the fluid machinery. As described above, the Official Action indicates that the Wang et al. reference anticipates each of independent Claims 35-42. However, the Wang et al. reference fails to disclose or suggest *calculating a reduction in power consumption achieved when reducing a rotational speed of the fluid machinery, based on the identified or refined characteristics of the fluid machinery*. Accordingly, the Applicants respectfully submit that the Wang et al. reference does not anticipate Claims 35-42 of the present application.

Accordingly, the Applicant respectfully requests the withdrawal of the anticipation rejection of Claims 1, 8-11, 20-22, 29, 30, and 35-42.

Claims 3-5 are considered allowable for the reasons advanced for Claim 1 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 1.

Claims 12-19 are considered allowable for the reasons advanced for Claim 11 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 11.

Claims 23, 25-28, 31, and 32 are considered allowable for the reasons advanced for Claim 22 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 22.

Claims 33 and 34 are considered allowable for the reasons advanced for Claim 30 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 30.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Finally, the attention of the Patent Office is directed to the change of address of Applicants' representative, effective January 6, 2003:

Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
1940 Duke Street
Alexandria, VA 22314.

Please direct all future communications to this new address.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



22850

Customer Number 22850
Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/01)

GJM:CDW:brf
I:\att\cdw\198006US2PCT\am1.doc

Gregory J. Maier
Registration No. 25,599
Attorney of Record

Christopher D. Ward
Registration No. 41,367